SEQUENCE LISTING

<110> Nunomura, Kiyotada

<120> POLYNUCLEOTIDE AMPLIFICATION METHOD

<130> GP104-02.UT

<160> 9

<170> FastSEQ for Windows Version 3.0

<210> 1
<211> 55
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer T7A(-)4190

<400> 1
aatttaatac gactcactat agggagagtt tgtatgtctg ttgctattat gtcta   55

<210> 2
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer (+)4108

<400> 2
acagcagtac aaatggcag   19

<210> 3
<211> 8933
<212> RNA
<213> Human Immunodeficiency Virus

<220>
<221> source
<222> (1)...(8933)
<223> Sequence of transcripts produced from the BH10
      plasmid.

<400> 3
gagcucucuc gaggcaggac ucggcuugcu gaagcgcgca cggcaagagg cgaggggcgg   60
cgacugguga guacgccaaa aauuuugacu agcggaggcu agaaggagag agaugggugc   120
gagagcguca guauuaagcg ggggagaauu agaucgaugg gaaaaaauuc gguuaaggcc   180
aggggggaaag aaaaaauaua aauuaaaaca uauaguaugg gcaagcaggg agcuagaacg   240
auucgcaguu aauccuggcc uguuagaaac aucagaaggc uguagacaaa uacugggaca   300
gcuacaacca ucccuucaga caggaucaga agaacuuaga ucauuauaua auacaguagc   360
aacccucuau ugugugcauc aaaggauaga gauaaaagac accaaggaag cuuuagacaa   420
gauagaggaa gagcaaaaca aaaguaagaa aaaagcacag caagcagcag cugacacagg   480
acacagcagu caggucagcc aaaauuaccc uauagugcag aacauccagg gcaaauggu   540
acaucaggcc auaucaccua gaacuuuaaa ugcaugggua aaaguaguag aagagaaggc   600
uuucagccca gaaguaauac ccauguuuuc agcauuauca gaaggagcca ccccacaaga   660
uuuaaacacc augcuaaaca cagugggggg acaucaagca gccaugcaaa uguuaaaaga   720
gaccaucaau gaggaagcug cagaauggga uagaguacau ccagugcaug cagggccuau   780
ugcaccaggc cagaugagag aaccaagggg aagugacaua gcaggaacua cuaguacccu   840
ucaggaacaa auaggaugga ugacaaauaa uccaccuauc ccaguaggag aaaauuauaa   900
aagauggaua auccugggau uaaauaaaau aguaagaaug uauagcccua ccagcauucu   960
ggacauaaga caaggaccaa agaaccuuuu uagagacuau guagaccggu ucuauaaaac   1020
ucuaagagcc gagcaagcuu cacaggaggu aaaaaauugg augacagaaa ccuuguuggu   1080
ccaaaaugcg aacccagauu guaagacuau uuuaaaagca uugggaccag cggcuacacu   1140

-1-

```
agaagaaaug augacagcau gucagggagu aggaggaccc ggccauaagg caagaguuuu    1200
ggcugaagca augagccaag uaacaaauac agcuaccaua augaugcaga gaggcaauuu    1260
uaggaaccaa agaaagaugg uuaaguguuu caauugugc aaagaagggc acacagccag    1320
aaauugcagg gccccuagga aaaagggcug uuggaaaugu ggaaaggaag gacaccaaau    1380
gaaagauugu acugagagac aggcuaauuu uuuagggaag aucuggccuu ccuacaaggg    1440
aaggccaggg aauuuucuuc agagcagacc agagccaaca gccccaccau uucuucagag    1500
cagaccagag ccaacagccc caccagaaga gagcuucagg ucuggggua gagacaacaac   1560
uccccucag aagcaggagc cgauagacaa ggaacuguau ccuuuaacuu cccucagauc    1620
acucuuuggc aacgacccu cgucacaaua aagauagggg ggcaacuaaa ggaagcucua     1680
uuagauacag gagcagauga uacaguauua gaagaaauga guuugccagg aagauggaaa    1740
ccaaaaauga uaggggggaau uggagguuuu aucaaaguaa gacaguauga ucagauacuc    1800
auagaaaucu guggacauaa agcuauaggu acaguauuag uaggaccuac accugucaac    1860
auaauuggaa gaaacuguu gacucagauu gguugcacuu uaaauuuucc cauuagcccu     1920
auugagacug uaccaguaaa auuaaagcca ggaauggaug gcccaaaagu uaaacaaugg    1980
ccauugacag aagaaaaaau aaaagcauua guagaaauuu guacagaaau ggaaaaggaa    2040
gggaaaauuu caaaaauugg gccugagaau ccauacaaua cuccaguauu ugccauaaag    2100
aaaaaagaca guacuaaaug gagaaaauua guagauuuca gagaacuuaa uaagagaacu     2160
caagacuucu gggaaguuca auuaggaaua ccacaucccg caggguuaaa aaagaaaaa     2220
ucaguaacag uacuggaugu gggugaugca uauuuuucag uucccuuaga ugaagacuuc     2280
aggaaguaua cugcauuuac cauaccuagu auaaacaaug agacaccagg gauuagauau     2340
caguacaaug ugcuuccaca gggauggaaa ggaucaccag caauauucca aaguagcaug    2400
acaaaaaucu uagagccuuu uaaaaaacaa aauccagaca uaguuaucua ucaauacaug    2460
gaugauuugu auguaggauc ugacuuagaa auagggcagc auagaacaaa aauagaggag     2520
cugagacaac aucuguugag gugggggacuu accacaccag acaaaaaaca ucagaaagaa    2580
ccuccauucc uuuggauggg uuaugaacuc cauccugaua aauggacagu acagccuaua     2640
gugcugccag aaaaagacag cuggacuguc aaugacauac agaaguuagu ggggaaauug    2700
aauugggcaa gucagauuua cccagggauu aaaguaaggc aauuauguaa acuccuuaga    2760
ggaaccaaag cacuaacaga aguaauacca cuaacagaag aagcagagcu agaacuggca    2820
gaaaacagag agauucuaaa agaaccagua cauggagugu auuaugaccc aucaaaagac     2880
uuaauagcag aaauacagaa gcaggggcaa ggccaaugga cauaucaaau uuaucaagag     2940
ccauuuaaaa aucugaaaac aggaaaauau gcaagaauga gggggugccca cacuaaugau    3000
guaaaacaau uaacagaggc agugcaaaa auaaccacag aaagcauagu aauauggggga    3060
aagacuccua aauuuaaacu acccauacaa aaggaaacau gggaaacaug guggacagag    3120
uauuggcaag ccaccuggau uccugagugg gaguuuguua uacccccucc uuuagugaaa    3180
uuaugguacc aguuagagaa agaacccaua guaggagcag aaaccuucua uguagauggg    3240
gcagcuaaca gggagacuaa auuaggaaaa gcaggauaug uuacuaacaa aggaagacaa    3300
aagguugucc cccuaacuaa cacaacaaau cagaaaacug aguuacaagc aauuuaucua    3360
gcuuugcagg auucaggauu agaaguaaac auaguaacag acucacaaua ugcauuagga    3420
aucauucaag cacaaccaga uaaaagugaa ucagaguuag ucaaucaaau aauagagcag    3480
uuaauaaaaa aggaaaaggu cuaucuggca uggguaccag cacacaaagg aauuggagga    3540
aaugaacaag uagauaaauu agucagugcu ggaaucagga aaauacuauu uuuagaugga    3600
auagauaagg cccaagauga acaugagaaa uaucacagua auuggagagc aauggcuagu    3660
gauuuuaacc ugccaccugu aguagcaaaa gaaauaguag ccagcuguga uaaaugucag    3720
cuaaaaggag aagccaugca uggacaagua gacuguaguc caggaauaug gcaacuagau    3780
uguacacauu uagaaggaaa aguuauuccug guagcaguuc auguagccag uggauauaua    3840
gaagcagaag uuauuccagc agaaacaggg caggaaacag cauauuuucu uuuaaaauua    3900
gcaggaagau ggccaguaaa aacaauacau acagacaaug gcagcaauuu caccagugcu    3960
acgguuaagg ccgccuguug guggggcggga aucaagcagg aauuuggaau ucccuacaau    4020
ccccaaaguc aaggaguagu agaaucuaug aauaaagaau uaaagaaaau uauaggacag    4080
guaagagauc aggcugaaca ucuuaagaca gcaguacaaa uggcaguauu cauccacaau    4140
uuuaaaagaa aagggggggau uggggggguac agugcagggg aaagaauagu agacauaaua    4200
gcaacagaca uacaaacuaa agaauuacaa aaacaaauua caaaaauuca aaauuuucgg    4260
guuuauuaca gggacagcag aaauccacuu uggaaaggac cagcaaagcu ccucugaaa    4320
ggugaagggg caguaguaau acaagauaau agugacauaa aaguagugcc aagaagaaaa    4380
gcaaagauca uuagggauua uggaaaacag auggcaggug augauugugu ggcaaguaga    4440
caggaugagg auuagaacau ggaaaaguuu aguaaaacac cauauguaug uuucagggaa    4500
agcuagggga ugguuuuaua gacaucacua ugaaagcccu cauccaagaa uaaguucaga    4560
aguacacauc ccacuagggg augcuagauu gguaauaaca acauauuggg gucugcauac    4620
aggagaaaga gacuggcauu ugggucaggg agucuccaua gaauggagga aaaagagaua    4680
uagcacacaa guagacccug aacuagcaga ccaacuaauu caucuguauu acuuugacug    4740
uuuuucagac ucugcuauaa gaaaggccuu auuaggacac auaguuagcc cuaggugugua   4800
auaucaagca ggacauaaca agguaggauc ucuacaauac uuggcacuag cagcauuaau    4860
aacaccaaaa aagauaaagc caccuuugcc uaguguuacg aaacugacag aggauagaug    4920
gaacaagccc cagaagacca agggccacag agggagccac acaaugaaug gacacuagag    4980
cuuuuagagg agcuuaagaa ugaagcuguu agacauuuuc cuaggauuug gcuccauggc    5040
uuagggcaac auaucuauga aacuuauggg gauacuuggg caggagugga agccauaaua    5100
```

```
agaauucugc aacaacugcu guuuauccau uuucagaauu ggggugucgac auagcagaau  5160
aggcguuacu cgacagagga gagcaagaaa uggagccagu agauccuaga cuagagcccu  5220
ggaagcaucc aggaagucag ccuaaaacug cuuguaccaa uugcuauugu aaaaaguguu  5280
gcuuucauug ccaaguuugu uucauaacaa aagccuuagg caucuccuau ggcaggaaga  5340
agcggagaca gcgacgaaga ccuccucaag gcagucagac ucaucaaguu ucucuaucaa  5400
agcaguaagu aguacaugua augcaaccua uacaaauagc aauaguagca uuaguaguag  5460
caauaauaau agcaauaguu gugugguuca uaguaaucau agaauauagg aaaauauuaa  5520
gacaaagaaa aauagacagg uuaauugaua gacuaauaga aagagcagaa gacaguggca  5580
augagaguga aggagaaaua ucagcacuug uggagauggg ggugagaug gggcaccaug  5640
cuccuuggga uguugaugau cuguagugcu acagaaaaau ugugggucac agucuauuau  5700
ggggaccug ugugugaagga agcaaccacc acucuauuuu gugcaucaga ugcuaaagca  5760
uaugauacag agguacauaa uguuugggcc guguacccac agaccccaac  5820
ccacaagaag uaguauuggu aaaugugaca gaaaauuuua acaugaggaa aaaugacaug  5880
guagaacaga ugcaugagga uauaaucagu uuaugggauc aaagccuaaa gccaugugua  5940
aaauuaaccc cacucugugu uaguuuaaag ugcacugauu ugaagaauga uacuaauacc  6000
aauaguagua gcgggagaau gauaauggag aaaggagaga uaaaaaacug cucuuucaau  6060
aucagcacaa gcauaagagg uaaggugcag aaagaauaug cauuuuuuua uaaacuugau  6120
auaauaccaa uagauaauga uacuaccagc uauacguuga caaguuguaa caccucaguc  6180
auuacacagg ccuguccaaa gguauccuuu gagccaauuc ccauacauua uugugccccg  6240
gcugguuuug cgauucuaaa auguaauaau aagacguuca auggaacagg accauguaca  6300
aaugucagca caguacaaug uacacaugga auuaggccag uaguaucaac ucaacugcug  6360
uuaaauggca gucuggcaga agagguguac guaauuagau cugccaauuu cacagacaau  6420
gcuaaaacca uaauaguaca gcugaaccaa ucuguagaaa uuaauuguac aagacccaac  6480
aacaauacaa gaaaaaguau ccguauccag agaggaccag ggagagcauu uguuacaaua  6540
ggaaaaauag gaaauaugag acaagcacau uguaacauua guagagcaaa auggaauaac  6600
acuuuaaaac agauagauag caaauuaaga gaacaauuug gaaauaauaa aacaauaauc  6660
uuuaagcagu ccucaggagg ggacccagaa auuguaacgc acaguuuuaa uuguggaggg  6720
gaauuuuucu acuguaauuc aacacaacug uuuaauagua cuugguuuaa uaguacuugg  6780
aguacuaaag ggucaaauaa cacugaagga agugacacaa ucacccuccc augcagaaua  6840
aaacaaauua uaaacaugug gcaggaagua ggaaaagcaa uguaugcccc ucccaucagu  6900
ggacaaauua gauguucauc aaauauuaca gggcugcuau uaacaagaga uggugguaau  6960
agcaacaaug aguccgagau cuucagaccu ggaggaggag auaugaggga caauggaga  7020
agugaauuau auaaauauaa aguaguaaaa auugaaccau uaggaguagc acccaccaag  7080
gcaaagagaa gaguggugca gagagaaaaa agagcagugg gaauaggagc uuuguuccuu  7140
ggguucuugg gagcagcagg aagcacuaug gcgcagcgu caaugacgcu gacgguacag  7200
gccagacaau uauugucugg uauagugcag cagcagaaca uuugcugag ggcuauugag  7260
gcgcaacagc aucuguugca acucacaguc uggggcauca agcagcucca ggcaagaauc  7320
cuggcugug aaagauaccu aaaggaucaa cagcuccugg ggauuggggg uugcucugga  7380
aaacucauuu gcaccacugc ugugccuugg aaugcuaguu ggaguaauaa aucucuggaa  7440
cagauuugga auaacaugac cuggauggag ugggacagag aaauuaacaa uuacacaagc  7500
uuaauacacu ccuuaauuga agaaucgcaa aaccagcaag aaaagaauga acaagaauua  7560
uuggaauuag auaaaugggc aaguuugugg aauugguuua acauaacaaa uuggcugugg  7620
uauauaaaau uauucauaau gauaguagga ggcuugguag guuuaagaau aguuuuugcu  7680
guacuuucug uagugaauag aguuaggcag ggauauucac cauuaucguu ucagacccac  7740
cucccaaucc cgaggggacc cgacaggccc gaaggaauag aagaagaagg uggagagaga  7800
gacagagaca gauccauucg auuagugaac ggauccuuag cacuuaucug ggacgaucug  7860
cggagccugu gccucuucag cuaccaccgc uugagagacu uacucuugau uguaacgagg  7920
auuguggaac uucugggacg caggggggug gaagcccuca aauauuggug gaaucccua  7980
caguauugga gucaggagcu aaagaauagu gcuguuagcu ugcucaaugc cacagcuaua  8040
gcaguagcug agggggacaga uaggguuaua gaaguaguac aaggagcuua uagagcuauu  8100
cgccacauac cuagaagaau aagacagggc uuggaaagga uuuugcuaua agaugggugg  8160
caagugguca aaaaguagug ugguuggaug gccugcugua agggaaagaa ugagacgagc  8220
ugagccagca gcagaugggg ugggagcagc aucucgagac cuagaaaaac auggagcaau  8280
cacaaguagc aacacagcag cuaacaaugc ugauugugcc uggcuagaag cacaagagga  8340
ggaggagug gguuuuccag ucacaccuca gguaccuuua agaccaauga cuuacaaggc  8400
agcuaguagau cuuagccacu uuuuaaaaga aaaggggggga cuggaagggc uaauucacuc  8460
ccaacgaaga caagauaucc uugaucugug gaucuaccac acacaaggcu acuucccuga  8520
uuagcagaac uacacaccag ggccagggau cagauaucca cugaccuuug gauggugcua  8580
caagcuagua ccaguugagc cagagaaguu agaagaagcc aacaaggag agaacaccag  8640
cuuguuacac ccugugagcc ugcauggaau ggaugacccg gagagagaag uguuagagug  8700
gagguuugac agccgccuag cauuucauca cauggcccga gagcugcauc cggaguacuu  8760
caagaacugc ugacaucgag cuugcuacaa gggacuuucc gcuggggacu uuccaggga  8820
gcguggccug gcgggacug gggaguggcg agcccucaga uccugcauau aagcagcugc  8880
uuuuugccug uacugggucu cucugguuag accagaucug agccugggag cuc  8933
```

<210> 4
<211> 8933
<212> RNA
<213> Artificial Sequence

<220>
<223> Sequence of the IAC-Asrc pseudo target

<221> mutation
<222> (4135)...(4155)
<223> Mutated positions: 4135, 4140-1, 4145, 4150, 4152-3, 4155

<400> 4

```
gagcucucuc gacgcaggac ucggcuugcu gaagcgcgca cggcaagagg cgaggggcgg      60
cgacgguga guacgccaaa aauuuugacu agcggaggcu agaaggagag agaugggugc       120
gagagcguca guauuaagcg ggggagaauu agaucgaugg gaaaaaauuc gguuaaggcc      180
aggggggaaag aaaaaauaua aauuaaaaca uauaguaugg gcaagcaggg agcuagaacg     240
auucgcaguu aauccuggcc uguuagaaac aucagaaggc uguagacaaa uacugggaca      300
gcuacaacca ucccuucaga caggaucaga agaacuuaga ucauuauaua auacaguagc      360
aacccucuau ugugugcauc aaaggauaga gauaaaagac accaaggaag cuuuagacaa      420
gauagaggaa gagcaaaaca aaaguaagaa aaaagcacag caagcagcag cugacacagg      480
acacagcagu caggucagcc aaaauuaccc uauagugcag aacauccagg ggcaaauggu      540
acaucaggcc auaucaccua gaacuuuaaa ugcaugggua aaaguaguag aagagaaggc      600
uuucagccca gaaguaauac ccauguuuuc agcauuauca gaaggagcca ccccacaaga      660
uuuaaacacc augcuaaaca caguggggggg acaucaagca gccaugcaaa uguuaaaaga     720
gaccaucaau gaggaagcug cagaauggga uagaguacau ccagugcaug cagggccuau      780
ugcaccaggc cagaugagag aaccaagggg aagugacaua gcaggaacua cuaguaccu       840
ucaggaacaa auaggaugga ugacaaauaa uccaccuauc ccaguaggag aaauuuauaa      900
aagauggaua auccugggau uaaauaaaau aguaagaaug uauagcccua ccagcauucu      960
ggacauaaga caaggaccaa aagaaccuuu uagagacuau guagaccggu ucuauaaaac     1020
ucuaagagcc gagcaagcuu cacaggaggu aaaaaauugg augacagaaa ccuuguuggu     1080
ccaaaaugcg aacccagacu guaagacuau uuuaaaagca uugggaccag cggcuacacu     1140
agaagaaaug augacagcau gucagggagu aggaggaccc ggccauaagg caagaguuuu     1200
ggcugaagca augagccaag uaacaaauac agcuaccaua augaugcaga gaggcaauuu     1260
uaggaaccaa agaaagaugg uuaaguguuu caauuguggc aaagaagggc acacagccag     1320
aaauugcagg gccccuagga aaaagggcug uuggaaaugu ggaaaggaag gacaccaaau     1380
gaaagauugu acugagagac aggcuaauuu uuuagggaag aucuggccuu ccuacaaggg     1440
aaggccaggg aauuuucuuc agagcagacc agagccaaca gccccaccau uucuucagag     1500
cagaccagag ccaacagccc caccagaaga gagcuucagg ucgggguag agacaacaac     1560
ucccccucag aagcaggagc cgauagacaa ggaacuguau ccuuuaacuu cccucagauc     1620
acucuuuggc aacgacccccu cgucacacaa aagauaggggg ggcaacuaaa ggaagcucua    1680
uugauacag gagcagauga uacaguauua gaagaaauga guuugccagg aagauggaaa      1740
ccaaaaauga uaggggggaau uggagguuuu aucaaaguaa gacaguauga ucagauacuc     1800
auagaaaucu guggacauaa agcuauaggu acaguauuag uaggaccuac accugucaac     1860
auaauuggaa gaaaucuguu gacucagauu gguugcacuu uaaauuuucc cauuagcccu     1920
auugagacug uaccaguaaa auuaaagcca ggaauggaug gcccaaaagu uaaacaaugg     1980
ccauugacag aagaaaaaau aaaagcauua guagaaauuu guacagaaau ggaaaaggaa     2040
gggaaaauuu caaaaauugg gccugagaau ccauacaaua cuccaguauu ugccauaaag     2100
aaaaaagaca guacuaaaug gagaaaauua guagauuuca gagaacuuaa uaagagaacu     2160
caagacuucu gggaaguuca auuaggaaua ccacaucccg caggguuaaa aaagaaaaaa     2220
ucaguaacag uacuggaugu gggugaugca uauuuuucag uucccuuaga ugaagacuuc     2280
aggaaguaua cugcauuuac cauaccuagu auaaacaaug agacaccagg gauuagauau     2340
caguacaaug ugcuuccaca gggauggaaa ggaucaccag caauauucca aaguagcaug     2400
acaaaaaucu uagagccuuu uaaaaaacaa aauccagaca uaguuaucua ucaauacaug     2460
gaugauuugu auguaggauc ugacuuagaa auagggcagc auagaacaaa aauagaggag     2520
cugagacaac aucuguugag gugggggacuu accacaccag acaaaaaaca ucagaaagaa     2580
ccuccauucc uuuggauggg uuaugaacuc cauccugaua aauggacagu acagccuaua     2640
gugcugccag aaaaagacag cuggacuguc aaugacauac agaaguuagu ggggaaauug     2700
aauugggcaa gucagauuua cccagggauu aaaguaaggc aauuauguaa acuccuuaga     2760
ggaaccaaag cacuaacaga aguaauacca cuaacagaag aagcagagcu agaacuggca     2820
gaaaacagag agauucuaaa agaaccagua cauggagugu auuaugaccc aucaaaagac     2880
uuaauagcag aaaauacaga gcaggggcaa ggccaaauggg cauacaaau uuaucaagag     2940
ccauuuaaaa aucugaaaac aggaaaauau gcaagaauga gggggugccca cacuaaugau     3000
guaaaacaau uaacagaggc agugcaaaaa auaaccacag aaagcauagu aauaugggga     3060
aagacuccua aauuuaaacu acccauacaa aaggaaacau gggaaacaug guggacagag     3120
```

                                    -4-

```
uauuggcaag ccaccuggau uccugagugg gaguuuguua auaccccucc uuuagugaaa 3180
uuaugguacc aguuagagaa agaacccaua guaggagcag aaaccuucua uguagauggg 3240
gcagcuaaca gggagacuaa auuaggaaaa gcaggauaug uuacuaacaa aggaagacaa 3300
aagguugucc cccuaacuaa cacaacaaau cagaaaacug aguuacaagc aauuuaucua 3360
gcuuugcagg auucaggauu agaaguaaac auaguaacag acucacaaua ugcauuagga 3420
aucauucaag cacaaccaga uaaaagugaa ucagaguuag ucaaucaaau aauagagcag 3480
uuaauaaaaa aggaaaaggu cuaucuggca uggguaccag cacacaaagg aauuggagga 3540
aaugaacaag uagauaaauu agucagugcu ggaaucagga aaauacuauu uuuagaugga 3600
auagauaagg cccaagauga acaugagaaa uaucacagua auuggagagc aauggcuagu 3660
gauuuuaacc ugccaccugu aguagcaaaa gaaauaguag ccagcuguga uaaaugucag 3720
cuaaaaggag aagccaugca uggacaagua gacuguaguc caggaauaug gcaacuagau 3780
uguacacauu uagaaggaaa aguuauccug guagcaguuc auguagccag uggauauaua 3840
gaagcagaag uuauuccagc agaaacaggg caggaaacag cauauuuucu uuuaaaauua 3900
gcaggaagau ggccaguaaa aacaauacau acagacaaug gcagcaauuu caccagugcu 3960
acgguuaagg ccgccuguug guggcgggga aucaagcagg aauuuggaau ucccuacaau 4020
ccccaaaguc aaggaguagu agaaucuaug aauaaagaau uaaagaaaau uauaggacag 4080
guàagagauc aggcugaaca ucuuaagaca gcaguacaaa uggcaguauu caucuacaag 4140
cuuagaagau agagagggau uggggggguac agugcagggg aaagaauagu agacauaaua 4200
gcaacagaca uacaaacuaa agaauuacaa aaacaaauua caaaaauuca aaauuuucgg 4260
guuuauuaca gggacagcag aaauccacuu uggaaaggac cagcaaagcu ccucuggaaa 4320
ggugaagggg caguaguaau acaagauaau agugacauaa aaguagugcc aagaagaaaa 4380
gcaaagauca uuagggauua uggaaaacag auggcaggug augauugugu ggcaaguaga 4440
caggaugagg auuagaacau ggaaaaguuu aguaaaacac cauauguaug uuucagggaa. 4500
agcuaggggg ugguuuuaua gacaucacua ugaaagcccu cauccaagaa uaaguucaga 4560
aguacacauc ccacuagggg augcuagauu gguaauaaca acauauuggg gucugcauac 4620
aggagaaaga gacuggcauu ugggucaggg agucuccaua gaauggagga aaaagagaua 4680
uagcacacaa guagacccug aacuagcaga ccaacuaauu caucuguauu acuuugacug 4740
uuuuucagac ucugcuauaa gaaaggccuu auuaggacac auaguuagcc cuagguguga 4800
auaucaagca ggacauaaca agguaggauc ucuacaauac uuggcacuag cagcauuaau 4860
aacaccaaaa aagauaaagc caccuuugcc uaguguuacg aaacugacag aggauagaug 4920
gaacaagccc cagaagacca agggccacag agggagccac acaaugaaug gacacuagag 4980
cuuuuagagg agcuuaagaa ugaagcuguu agacauuuuc cuaggauuug gcuccauggc 5040
uuagggcaac auaucuauga aacuuauggg gauacuuggg caggagugga agccauaaua 5100
agaauucugc aacaacugcu guuuauccau uuucagaauu ggguucgac auagcagaau 5160
aggcguuacu cgacagagga gagcaagaaa uggagccagu agauccuaga cuagagcccu 5220
ggaagcaucc aggaagucag ccuaaaacug cuuguaccaa uugcuauugu aaaaaguguu 5280
gcuuucauug ccaaguuugu uucauaacaa aagccuuagg caucuccuau ggcaggaaga 5340·
agcggagaca gcgacgaaga ccuccucaag gcagucagac ucaucaaguu ucucuaucaa 5400
agcaguaagu aguacaugua augcaaccua uacaauauag aauaguauua uuagauguag 5460
caauaauaau agcaaauaua guuggggucca uaguaaucau agaauauuag aaaauauuaa 5520
gacaaagaaa aauagacagg uuaauugaua gacuaauaga aagagcagaa gacaguggca 5580
augagaguga aggagaaaua ucagcacuug uggagauggg ggugagaug gggcaccaug 5640
cuccuuggga uguugaugau cuguagugcu acagaaaaau uguggguac agucuauuau 5700
gggguaccug uguggaagga agcaaccacc acucuauuuu gugcaucaga ugcuaaagca 5760
uaugauacag agguacauaa uguuugggcc acacaugccu guguacccac agaccccaac 5820
ccacaagaag uaguauuggu aaaugugaca gaaaauuuua acauguggaa aaaugacaug 5880
guagaacaga ugcaugagga uauaaucagu uuaugggauc aaagccuaaa gccaugugua 5940
aaauuaaccc cacucugugu uaguuuaaag ugcacugauu ugaagaauga uacuaauacc 6000
aauaguagua gcgggagaau gauaauggag aaaggagaga uaaaaaacug cucuuucaau 6060
aucagcacaa gcauaagagg uaaggugcag aaagaauaug cauuuuuuua uaaacuugau 6120
auaauaccaa uagauaauga uacuaccagc uauacguuga caaguuguaa caccucaguc 6180
auuacacagg ccuguccaaa gguaucccuu gagccaauuc ccauacauua uugugccccg 6240
gcugguuuug cgauucuaaa auguaauaau aagacguuca auggaacagg accauguaca 6300
aaugucagca caguacaaug uacacaugga auuaggccag uaguaucaac ucaacugcug 6360
uuaaauggca gucuggcaga agaagaggua guaauuagau cugccaauuu cacagacaau 6420
gcuaaaacca uaauaguaca gcugaaccaa ucuguagaaa uuaauuguac aagacccaac 6480
aacaauacaa gaaaaaguau ccguauccag agaggaccag ggagagcauu uguuacaaua 6540
ggaaaaauag gaaauaugag acaagcacau uguaacauua guagagcaaa auggaauaac 6600
acuuuaaaac agauagauag caaauuaaga gaacaauuug gaaauaauaa aacaauaauc 6660
uuuaagcagu ccucaggagg ggacccagaa auuguaacgc acaguuuuaa uuguggaggg 6720
gaauuuuucu acuguaauuc aacacaacug uuuaauagua cuuggguuaa uaguacuugg 6780
aguacuaaag ggucaaauaa cacugaagga agugacaaa ucacccuccc augcagaaua 6840
aaacaaauua uaaacauguy gcaggaagua ggaaaagcaa uguaugcccc ucccaucagu 6900
ggacaaauua gauguuucauc aaauauuaca gggcugcuau uaacaagaga uggugguaau 6960
agcaacaaug agaccgagau cuucagaccu ggaggaggag auaugaggga caauuggaga 7020
agugaauuau auaaauauaa aguaguaaaa auugaaccau uaggaguagc acccaccaag 7080
```

```
gcaaagagaa gaguggugca gagagaaaaa agagcagugg gaauaggagc uuuguuccuu   7140
ggguucuugg gagcagcagg aagcacuaug ggcgcagcgu caaugacgcu gacgguacag   7200
gccagacaau uauugucugg uauagugcag cagcagaaca auuugcugag ggcuauugag   7260
gcgcaacagc aucuguugca acucacaguc ugggggcauca agcagcucca ggcaagaauc   7320
cuggcugugg aaagauaccu aaaggaucaa cagcuccugg ggauuggggg uugcucugga   7380
aaacucauuu gcaccacugc ugugccuugg aaugcuaguu ggaguaauaa aucucuggaa   7440
cagauuugga auaacaugac cuggauggag ugggacagag aaauuaacaa uuacacaagc   7500
uuaauacacu ccuuaauuga agaaucgcaa aaccagcaag aaaagaauga acaagaauua   7560
uuggaauuag auaaaugggc aaguuugugg aauugguuua acauaacaaa uuggcugugg   7620
uauauaaaau uauucauaau gauaguagga ggcuugguag guuuaagaau aguuuuugcu   7680
guacuuucug uagugaauag aguuaggcag ggauauucac cauuaucguu ucagacccac   7740
cucccaaucc cgaggggacc cgacaggccc gaaggaauag aagaagaagg uggagagaga   7800
gacagagaca gauccauucg auuagugaac ggauccuuag cacuuaucug ggacgaucug   7860
cggagccugu gccucuucag cuaccaccgc uugagagacu uacucuugau uguaacgagg   7920
auuguggaac uucugggacg caggggugug gaagcccuca aauauuggug gaaucuccua   7980
caguauugga gucaggagcu aaagaauagu gcguuuagcu ugcucaaugc cacagcuaua   8040
gcaguagcug aggggacaga uaggguuaua gaaguaguac aaggagcuua uagagcuauu   8100
cgccacauac cuagaagaau aagacagggc uuggaaagga uuuugcuaua agaugggugg   8160
caagugguca aaaaguagug ugguuggaug gccugcugua agggaaagaa ugagacgagc   8220
ugagccagca gcagauggg ugggagcagc aucucgagac cuagaaaaac auggagcaau   8280
cacaaguagc aacacagcag cuaacaaugc ugauguugcc uggcuagaag cacaagagga   8340
ggaggaggug gguuuuccag ucacaccuca gguaccuuua agaccaauga cuuacaaggc   8400
agcuguagau cuuagccacu uuuuaaaaga aaaggggggga cuggaagggc uaauucacuc   8460
ccaacgaaga caagauaucc uugaucuug gaucuaccac acacaaggcu acuucccuga   8520
uuagcagaac uacacaccag gccagggau cagauaucca cugaccuuug gauggugcua   8580
caagcuagua ccaguugagc cagagaaguu agaagaagcc aacaaggag agaacaccag   8640
cuuguuacac ccugugagcc ugcauggaau ggaugacccg gagagagaag uguuagagug   8700
gagguuugac agccgccuag cauuucauca cauggcccga gagcugcauc cggaguacuu   8760
caagaacugc ugacaucgag cuugcuacaa gggacuuucc gcugggggacu uuccagggag   8820
gcguggccug ggcgggacug gggaguggcg agcccucaga uccugcauau aagcagcugc   8880
uuuuugccug uacuggggucu cucugguuag accagaucug agccugggag cuc          8933
```

```
        <210> 5
        <211> 30
        <212> DNA
        <213> HIV

        <220>
        <221> source
        <222> (1)...(30)
        <223> Sequence of AE(+)4134 HIV-specific probe.

        <400> 5
ccacaatttt aaagaaaag gggggattgg                                              30

        <210> 6
        <211> 67
        <212> DNA
        <213> Artificial Sequence

        <220>
        <223> Sequence of (-)3837 A30 capture probe.

        <400> 6
ccctgtttct gctggaataa cttctgcttc tatatttaaa aaaaaaaaaa aaaaaaaaaa        60
aaaaaaa                                                                      67

        <210> 7
        <211> 57
        <212> DNA
        <213> Artificial Sequence

        <220>
        <223> Sequence of the (-)4258 A30 capture probe.
```

<400> 7
tctgctgtcc ctgtaataaa cccgtttaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa   57

<210> 8
<211> 22
<212> DNA
<213> HIV

<220>
<221> source
<222> (0)...(0)
<223> Sequence of the AE(+)4134b probe

<400> 8
ccacaatttt aaaagaaaag gg   22

<210> 9
<211> 8933
<212> RNA
<213> Artificial Sequence

<220>
<223> Sequence of the IAC-Bscr pseudo target

<221> mutation
<222> (4140)...(4159)
<223> Mutated positions: 4140-42, 4145-47, 4152,
      4156-57, 4159

<400> 9
```
gagcucucuc gacgcaggac ucggcuugcu gaagcgcgca cggcaagagg cgaggggcgg     60
cgacgggtga guacgccaaa aauuuugacu agcggaggcu agaaggagag agaugggugc    120
gagagcguca guauuaagcg ggggagaauu agaucgaugg gaaaaaauuc gguuaaggcc    180
aggggggaaag aaaaaauaua aauuaaaaca uauaguaugg gcaagcaggg agcuagaacg   240
auucgcaguu aauccuggcc uguuagaaac aucagaaggc uguagacaaa uacugggaca    300
gcuacaacca ucccuucaga caggaucaga agaacuuaga ucauuauaua auacaguagc    360
aacccucuau ugugugcauc aaaggauaga gauaaaagac accaaggaag cuuuagacaa    420
gauagaggaa gagcaaaaca aaaguaagaa aaaagcacag caagcagcag cugacacagg    480
acacagcagu caggucagcc aaaauuaccc uauagugcag aacauccagg ggcaaauggu    540
acaucaggcc auaucaccua gaacuuuaaa ugcaugggua aaaguaguag aagagaaggc    600
uuucagccca gaaguaauac ccauguuuuc agcauuauca gaaggagcca ccccacaaga    660
uuuaaacacc augcuaaaca caguggggggg acaucaagca gccaugcaaa uguuaaaaga    720
gaccaucaau gaggaagcug cagaauggga uagaguacau ccagugcaug cagggccuau    780
ugcaccaggc cagaugagag aaccaagggg aagugacaua gcaggaacua cuaguacccu    840
ucaggaacaa auaggaugga ugacaaauaa uccaccuauc ccaguaggag aaauuuauaa    900
aagauggaua auccugggau uaaauaaaau aguaagaaug uauagcccua ccagcauucu    960
ggacauaaga caaggaccaa aagaaccuuu uagagacuau guagaccggu ucuauaaaac   1020
ucuaagagcc gagcaagcuu cacaggaggu aaaaaauugg augacagaaa ccuuguuggu   1080
ccaaaaugcg aacccagauu guaagacuau uuuaaaagca uugggaccag cggcuacacu   1140
agaagaaaug augacagcau gucagggagu aggaggaccc ggccauaagg caagaguuuu   1200
ggcugaagca augagccaag uaacaaauac agcuaccaua augaugcaga gaggcaauuu   1260
uaggaaccaa agaaagaugg uuaaguguuu caauuguggc aaagaagggc acacagccag   1320
aaauugcagg gccccuagga aaaagggcug uuggaaaugu ggaaaggaag gacaccaaau   1380
gaaagauugu acugagagac aggcuaauuu uuuagggaag aucuggccuu ccuacaaggg   1440
aaggccaggg aauuuucuuc agagcagacc agagccaaca gccccaccau uucuucagag   1500
cagaccagag ccaacagccc caccagaaga gagcuucagg ucuggggguag agacaacaac   1560
uccccucag aagcaggagc cgauagacaa ggaacuguau ccuuuaacuu cccucagauc    1620
acucuuuggc aacgacccu cgucacaaua aagauagggg ggcaacuaaa ggaagcucua    1680
uuagauacag gagcagauga uacaguauua gaagaaauga guuugccagg aagauggaaa   1740
ccaaaaauga uagggggaau uggagguuuu aucaaaguaa gacaguauga ucagauacuc   1800
auagaaaucu guggacauaa agcuauaggu acaguauuag uaggaccuac accugucaac   1860
auaauuggaa gaaaucuguu gacucagauu gguugcacuu uaaauuuucc cauuagcccu   1920
auugagacug uaccaguaaa auuaaagcca ggaauggaug cccaaaagu uaaacaaugg    1980
ccauugacag aagaaaaaau aaaagcauua guagaaauuu guacagaaau ggaaaaggaa   2040
gggaaaauuu caaaaauugg gccugagaau ccauacaaua cuccaguauu ugccauaaag   2100
aaaaaagaca guacuaaaug gagaaaauua guagauuuca gagaacuuaa uaagagaacu   2160
```

```
caagacuucu gggaaguuca auuaggaaua ccacaucccg caggguuaaa aaagaaaaaa    2220
ucaguaacag uacuggaugu gggugaugca uauuuuucag uucccuuaga ugaagacuuc    2280
aggaaguaua cugcauuuac cauaccuagu auaaacaaug agacaccagg gauuagauau    2340
caguacaaug ugcuuccaca gggauggaaa ggaucaccag caauauucca aaguagcaug    2400
acaaaaaucu uagagccuuu uaaaaaacaa aauccagaca uaguuaucua ucaauacaug    2460
gaugauuugu auguaggauc ugacuuagaa auagggcagc auagaacaaa aauuagaggag    2520
cugagacaac aucuguugag guggggacuu accacaccag acaaaaaaca ucagaaagaa    2580
ccuccauucc uuuggauggg uuaugaacuc cauccugaua aauggacagu acagccuaua    2640
gugcugccag aaaaagacag cuggacuguc aaugacauac agaaguuagu ggggaaauug    2700
aauugggcaa gucagauuua cccagggauu aaaguaaggc aauuauguaa acuccuuaga    2760
ggaaccaaag cacuaacaga aguaaccuca cuaacagaag aagcagagcu agaacuggca    2820
gaaaacagag agauucuaaa agaaccagua cauggagugu auuaugaccc aucaaaagac    2880
uuaauagcag aaauacagaa gcaggggcaa ggccaaugga cauaucaaau uuaucaagag    2940
ccauuuaaaa aucugaaaac aggaaaauau gcaagaauga ggggugccca cacuaaugau    3000
guaaaacaau uaacagaggc agugcaaaaa auaaccacag aaagcauagu aauaugggga    3060
aagacuccua aauuuaaacu acccauacaa aaggaaacau gggaaacaug guggacagag    3120
uauuggcaag ccaccuggau uccugagugg gaguuuguua uacccccucc uuuagugaaa    3180
uuaugguacc aguuagagaa agaacccaua guaggagcag aaaccuucua uguagauggg    3240
gcagcuaaca gggagacuaa auuaggaaaa gcaggauaug uuacuaacaa aggaagacaa    3300
aagguugucc cccuaacuaa cacaacaaau cagaaaacug aguuacaagc aauuuaucua    3360
gcuuugcagg auucaggauu agaaguaaac auagucacaa uaucagaguu agucaaucaaau    3420
aaauagagcag acauucaag cacaaccaga uaaaagugaa ucagaguuag ucaaucaaau    3480
uuaauaaaaa aggaaaaggu cuaucuggca uggguaccag cacacaaagg aauuggagga    3540
aaugaacaag uagauaaauu agucagugcu ggaaucagga aaauacuauu uuuagaugga    3600
auagauaagg cccaagauga acaugagaaa uaucacagua auuggagagc aauggcuagu    3660
gauuuuaacc ugccaccugu aguagcaaaa gaaauaguag ccagcuguga uaaaugucag    3720
cuaaaaggag aagccaugca uggacaagua gacuguaguc caggaauaug gcaacuagau    3780
uguacacauu uagaaggaaa aguuauccug guagcaguuc auguagccag uggauauaua    3840
gaagcagaag uuauuccagc agaaacaggg caggaaacag cauauuuucu uuuaaaauua    3900
gcaggaagau ggccaguaaa aacaauacau acagacaaug gcagcaauuu caccagugcu    3960
acgguuaagg ccgccuguug gugggcggga aucaagcagg aauugggcaau ucccuacaau    4020
ccccaaaguc aaggaguagu agaaucuaug aauaaagaaa uaaagaaaau uauaggacag    4080
guaagagauc aggcugaaca ucuuaagaca gcaguacaaa uggcaguauu cauccagaaa    4140
aatatttgaa aggggaagct tgggggggtac agugcagggg aaagaauagu agacauaaua    4200
gcaacagaca uacaaacuaa agaauuacaa aaacaaauua caaaaauuca aaauuuucgg    4260
guuuauuaca gggacagcag aaauccacuu uggaaaggac cagcaaagcu ccucuggaaa    4320
ggugagggg caguaguaau acaagauaau agugacauaa aaguagugcc aagaagaaaa    4380
gcaaagauca uuagggauua uggaaaacag auggcaggug augauugugu ggcaaguaga    4440
caggaugagg auuagaacau ggaaaaguuu aguaaaacac cauauguaug uuucagggaa    4500
agcuagggga ugguuuuaua gacaucacua ugaaagcccu cauccaagaa uaaguucaga    4560
aguacacauc ccacuagggg augcuagauu gguaauaaca acauauuggg gucugcauac    4620
aggagaaaga gacuggcauu ugggucaggg agucuccaua gaauggagaa aaaagagaua    4680
uagcacacaa guagacccug aacuagcaga ccaacuaauu caucuguauu acuuugacug    4740
uuuuucagac ucugcuauaa gaaaggccuu auuaggacac auaguuagcc cuagguguga    4800
auaucaagca ggacauaaca agguaggauc ucuacaauac uuggcacuag cagcauuaau    4860
aacaccaaaa aagauaaagc caccuuugcc uaguguuacg aaacugacag aggauagaug    4920
gaacaagccc cagaagacca agggccacag agggagccac acaaugaaug gacacuagag    4980
cuuuuagagg agcuuaagaa ugaagcuguu agacauuuuc cuaggauuug gcuccauggc    5040
uuagggcaac auaucuauga aacuuauggg gauacuuggg caggagugga agccauaaua    5100
agaauucugc aacaacugcu guuuauccau uuucagaauu ggggugucgac auagcagaau    5160
aggcguuacu cgacagagga gagcaagaaa uggagccagu agauccuaga cuagagcccu    5220
ggaagcaucc aggaagucag ccuaaaacug cuuguaccaa uugcuauugu aaaaaguguu    5280
gcuuucauug ccaaguuugu uucaacaaca aagccuuagg caucuccuau ggcaggaaga    5340
agcggagaca gcgacgaaga ccuccucaag gcagucagac ucaucaaguu ucucuaucaa    5400
agcaguaagu aguacaugua augcaaccua uacaaauagc aauaguagca uuaguaguag    5460
caauaauaau agcaauaguu guguggucca uaguaaucau agaauauagg aaaauauuaa    5520
gacaaagaaa aauagacagg uuaauugaua gacuaauaga aagagcagaa gacaguggca    5580
augagaguga aggagaaaua ucagcacuug uggagauggg gguggagaug gggcaccaug    5640
cuccuuggga uguugaugau cuguagugcu acagaaaaau uguggguac agucuauuau    5700
ggggguaccug uguggaagga agcaaccacc acucuauuuu gugcaucaga ugcuaaagca    5760
uaugauacag agguacauaa uguuugggcc acacaugcu guguacccac agaccccaac    5820
ccacaagaag uaguauuggu aaaugugaca gaaaauuuua acauguggaa aaaugacaug    5880
guagaacaga ugcaugagga uauaaucagu uuaugggauc aaagccuaaa gccaugugua    5940
aaauuaaccc cacucugugu uaguuuaaag ugcacugauu ugaagaauga uacuaauacc    6000
aauaguagua gcgggagaau gauaauggag aaaggagaga uaaaaaacug cucuuucaau    6060
aucagcacaa gcauaagagg uaaggugcag aaagaauaug cauuuuuuua uaaacuugau    6120
```

```
auaauaccaa  uagauaauga  uacuaccagc  uauacguuga  caaguuguaa  caccucaguc  6180
auuacacagg  ccuguccaaa  gguauccuuu  gagccaauuc  ccauacauua  uugugccccg  6240
gcugguuuug  cgauucuaaa  auguaauaau  aagacguuca  auggaacagg  accauguaca  6300
aaugucagca  caguacaaug  uacacaugga  auuaggccag  uaguaucaac  ucaacugcug  6360
uuaaauggca  gucuggcaga  agaagaggua  guaauuagau  cugccaauuu  cacagacaau  6420
gcuaaaacca  uaauaguaca  gcugaaccaa  ucuguagaaa  uuaauuguac  aagacccaac  6480
aacaauacaa  gaaaaaguau  ccguauccag  agaggaccag  ggagagcauu  uguuacaaua  6540
ggaaaaauag  gaaauaugag  acaagcacau  uguaacauua  guagagcaaa  auggaauaac  6600
acuuuaaaac  agauagauau  caaauuaaga  gaacaauuug  gaaauaauaa  aacaauaauc  6660
uuuaagcagu  ccucaggagg  ggacccagaa  auuguaacgc  acaguuuuaa  uuguggaggg  6720
gaauuuuucu  acuguaauuc  aacacaacug  uuuaauagua  cuugguuuaa  uaguacuugg  6780
aguacuaaag  ggucaaauaa  cacugaagga  agugacacaa  ucacccuccc  augcagaaua  6840
aaacaaauua  uaaacaugug  gcaggaagua  ggaaaagcaa  uguaugcccc  ucccaucagu  6900
ggacaaauua  gauguucauc  aaauauuaca  gggcugcuau  uaacaagaga  uggugguaau  6960
agcaacaaug  aguccgagau  cuucagaccu  ggaggaggag  auaugaggga  caauuggaga  7020
agugaauuau  auaaauauaa  aguaguaaaa  auugaaccau  uaggaguagc  acccaccaag  7080
gcaaagagaa  gaguggugca  gagagaaaaa  agagcagugg  gaauaggagc  uuuguuccuu  7140
ggguucuugg  gagcagcagg  aagcacuaug  ggcgcagcgu  caaugacgcu  gacgguacag  7200
gccagacaau  uauugucugg  uauagugcga  cagcagaaca  auuugcugag  ggcuauugag  7260
gcgcaacagc  aucucauugc  acucacaguc  uggggcauca  agcagcucca  ggcaagaauc  7320
cuggcugugg  aaagauaccu  aaaggaucaa  cagcuccugg  ggauuugggg  uugcucugga  7380
aaacucauuu  gcaccacugc  ugugccuugg  aaugcuaguu  ggaguaauaa  aucucuggaa  7440
cagauuugga  auaacaugac  cuggauggag  ugggacagag  aaauuaacaa  uuacacaagc  7500
uuaauacacu  ccuuaauuga  agaaucgcaa  aaccagcaag  aaaagaauga  acaagaauua  7560
uuggaauuag  auaaaugggc  aaguuugugg  aauugguuua  acauaacaaa  uuggcugugg  7620
uauauaaaau  uauucauaau  gauaguagga  ggcuugguag  guuuaagaau  aguuuuugcu  7680
guacuuucug  uagugaauag  aguuaggcag  ggauauucac  cauuaucguu  ucagacccac  7740
cucccaaucc  cgaggggacc  cgacaggccc  gaaggaauag  aagaagaagg  uggagagaga  7800
gacagagaca  gauccauucg  auuagugaac  ggauccuuag  cacuuaucug  ggacgaucug  7860
cggagccugu  gccucuucag  cuaccaccgc  uugagagacu  uacucuugau  uguaacgagg  7920
auuguggaac  uucugggacg  caggggugug  gaagcccuca  aauauuggug  gaaucuccua  7980
caguauugga  gucaggagcu  aaagaauagu  gcuguuagcu  ugcucaaugc  cacagcuaua  8040
gcaguagcug  aggggacaga  uaggguuaua  gaaguaguac  aaggagcuua  uagagcuauu  8100
cgccacauac  cuagaagaau  aagacaggc  uuggaaagga  uuuugcuaua  agaugggugg  8160
caagguguca  aaaaguagug  ugguuggaug  gccugcugua  agggaaagaa  ugagacgagc  8220
ugagccagca  gcagaugggg  ugggagcagc  aucucgagac  cuagaaaaac  auggagcaau  8280
cacaaguagc  aacacagcag  cuaacaaugc  ugauugugcc  uggcuagaag  cacaagagga  8340
ggaggagggug  gguuuuccag  ucacaccuca  gguaccuuua  agaccaauga  cuuacaaggc  8400
agcuguagau  cuuagccacu  uuuuaaaaga  aaagggggga  cuggaagggc  uaauucacuc  8460
ccaacgaaga  caagauaucc  uugaucugug  gaucuaccac  acacaaggcu  acuucccuga  8520
uuagcagaac  uacacaccag  ggccaggau  cagauaucca  cugaccuuug  gauggugcua  8580
caagcuagua  ccaguugagc  cagagaaguu  agaagaagcc  aacaaggag  agaacaccag  8640
cuuguuacac  ccugugagcc  ugcauggaau  ggaugacccg  gagagagaag  uguuagagug  8700
gagguuugac  agccgccuag  cauuucauca  cauggcccga  gagcugcauc  cggaguacuu  8760
caagaacugc  ugacaucgag  cuugcuacaa  gggacuuucc  gcuggggacu  uuccagggag  8820
gcguggccug  ggcgggacug  gggaguggcg  agcccucaga  uccugcauau  aagcagcugc  8880
uuuuugccug  uacugg9gucu  cucugguuag  accagaucug  agccugggag  cuc         8933
```